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AUTHOR Stickel, Sue A.; Bonett, Rhonda M.
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ABSTRACT

Career self-efficacy as a component of career development has been an important research topic. Measurement of the self-efficacy construct has been a concern since inception of research in this area. The question is whether instruments will be measuring the same construct across groups whose experiences in acquiring efficacy expectations may be culturally different. In a previous study a different factor structure was indicated for Caucasian and African American samples. In this study, subjects (N=71) were 7th, 8th, 10th, 11th, and 12th grade African American students. These students attended a state-funded residential school for children of the armed services, which is located in a mid-Atlantic state. Most students (85%) are African American and are recruited from a larger innercity metropolitan area. The Career Attitude Scale (CAS) was used which includes short descriptions of nine traditionally female and nine traditionally male occupations. Participants also filled out the Coopersmith Self Esteem Inventory (SEI). For this study, analysis of variance was performed on the total CAS scores as the traditionally male and traditionally female factors were not indicated for the African American sample. Analyses revealed a significant main effect for gender, plans for college, and year in school. A separate analysis of variance on the SEI scores indicated a significant main effect for gender. Plans for college and year in school were not significant. The survey instrument is attached. (Contains 18 references.) (ABL)

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Career Self-Efficacy and African American Secondary School Students

A Preliminary Analysis

Sue A. Stickel
Eastern Michigan University

Rhonda M. Bonett
University of Wyoming

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Career Self-Efficacy and African American Secondary School Students: A Preliminary Analysis

Career self-efficacy as a component of career development has been an important research topic since the work of Hackett and Betz (1981). They postulated a causal model of career development with perceived self-efficacy functioning as a mediator. Their research began to document how aspects of social learning theory may contribute to the beliefs individuals develop regarding personal competencies and how such beliefs can influence career development by affecting choices made and accomplishments realized. The purpose of this study was a preliminary investigation of the psychometric properties of the Career Attitude Scale (*CAS*) (Stickel & Bonett,1989) with African American secondary school students, a largely understudied population.

Self-efficacy theory is a component of Bandura's (1977) social cognitive learning theory. Self-efficacy expectations are described as beliefs in one's ability to successfully perform a given behavior. Self precepts of efficacy have an impact on choices, the amount of effort invested, how long to persevere, and whether tasks are approached with confidence or hesitation. A significant issue arising as a result of career self-efficacy research is how the career interests and pursuits of women may be limited by their perceptions that they lack the ability to perform male-dominated occupations. A similar process may occur in members of minority groups as a result of ethnically related socialization influences and limited opportunities for developing positive efficacy expectations for certain careers.

Perceptions of efficacy are theorized to be acquired through four major means. Performance accomplishments; vicarious learning, which includes role modeling, verbal persuasion and support from others; and emotional arousal (Bandura, 1986). These sources of efficacy expectations interact reciprocally in a continuing process which then affects performance judgments that influence actions and decisions. Although specific research

documenting career self efficacy with minority populations is limited, studies provide links with means of acquiring efficacy.

Evidence that minority children have performance deficits in comparison to members of the majority culture is well documented. Spindler and Spindler (1989) postulate that minority children may not understand or master the instrumental relationships necessary for traditional school achievement. For example, emotional competencies for test taking in anglo-oriented schools such as getting control of the content to be tested the significance of time, and the need for focused excitement or anxiety are not fully understood in a cultural context and may affect the performance of minority children.

Social structure is an important variable affecting occupational choice. As African Americans have struggled to enter the mainstream, this seriously limits the range of models available in a variety of career areas. Sewell and Martin (1976) noted a pattern of occupational choice for African American adolescents that demonstrated more interest in artistic, health and welfare, and business-clerical fields. These areas provided more opportunity to observe black role models. The influence of highly visible media figures in occupational areas of limited participation such as sports and acting was also cited. Although discussing the lack of academic preparation, Hall and Post-Kammer (1987) considered the lack of role models as a serious barrier to increasing the number of African Americans who major in science and math.

Gender issues also play a role. African American women share a unique historical experience. They have viewed working women and assume that they will adopt dual roles as mother and worker, based on expectations of economic need (Smith, 1981). Thomas and Shields, (1987) found young women to value the monetary rewards of work more so than did young men. However, gender differences in career interests paralleling those of Caucasian women are also present (Dawkins, 1980; Thomas, 1984) as well as strong gender influences on career choices (June & Fooks, 1980; Thomas, 1985).

The career related literature concerning minorities is characterized by complexity. This complexity seems bound to the

intricate processes involved in responding and adapting to the dominant culture and a rapidly changing society. Spokane and Hawks (1990) identified constraints that seem to have common effects on many special groups: These constraints include:

1. Limited consideration of certain careers
2. Reduced expectations that stated aspirations will be attained
3. Increased salience of "external" factors in career choice
4. Need for structured interventions to overcome social constraints.
5. Increased stress for women and minority group members (p. 106).

Measurement of the self-efficacy construct has been a concern since inception of research in this area. Self efficacy measures have varied structurally from assessment of specific delimited tasks to measurement of more global multifaceted perceptions of ability. Highly task specific measrues have an advantage if increased precision, but can lack generalizability and clinical relevance. Lent and Hackett (1987) noted that more global assessment instruments are subject to the tapping of alternative constructs such as self-esteem or grade point average and construct validity must be carefully investigated when developing a more global measure of self-efficacy. Another concern (Osipow, 1991) is that measures used in most studies have been homemade, unvalidated, and sample and occupation specific. Related to this concern is the question of whether instruments will be measuring the same construct across groups whose experiences in acquiring efficacy expectations may be culturally different. In a previous study (Bonett & Stickel, 1992) a different factor structure was indicated for Caucasian and African American samples.

Method

Subjects

Subjects were 71 7th and 8th and 10th through 12th grade African American students (Table 1). These students attend a state funded residential school for children of veterans of the armed services, which is located in a mid Atlantic state. This school was founded following the Civil War and has undergone numerous changes. At present, most students (85%) are African American and are recruited from a large inner city metropolitan area. Selection of students is on the basis of a parent having been a member of the armed forces, and the possibility that the school will be a positive experience. Students with special education needs are not accepted, as services are not available. Due to small numbers of Caucasian students, only African American students were included in the study and grade levels were combined for most analyses.

Instrument

A number of instruments have been developed to study self-efficacy. Lent and Hackett (1987) suggested that the measurement of the self-efficacy construct was in need of refinement and clarification. The *Career Attitude Scale* (*CAS*) has been developed in response to this need, with encouraging results in terms of reliability and validity (Bonett & Stickel, 1992). The *CAS* includes short descriptions of 9 traditionally female and 9 traditionally male occupations. Based on U.S. census information, occupations that showed over 75% female employment were considered to be traditional for women (for example, nurse, elementary school teacher, dietician) and those with over 75% male employment were considered traditional for men (electrical engineer, forester, detective). The occupations were selected keeping the following characteristics in mind: physical demands, danger, stress or emotional demands, required knowledge of science or math, work schedule, and schedule flexibility An attempt was made to match the traditionally male and traditionally female occupations along these dimensions so that participants would be more likely to respond to the occupations rather than to such specific aspects as

noted above. Occupational descriptions were adapted from the *Occupational Outlook Handbook* . The Occupational Outlook Handbook is written with a 6th to 8th grade reading level thus the descriptions were considered suitable for younger students. This is the initial use of the *CAS* with a secondary school population. Participants were administered the *CAS* in English, social studies, and guidance classes by two graduate student counseling interns. Ninth grade students were not available during the time of the study. Participants also filled out the Coopersmith Self Esteem Inventory SEI; Coopersmith, 1981), and were also asked whether or not they planned to attend college.

Results

Factor analysis (principal components, promax rotation) of the African American students' scores indicated a one-factor pattern pattern. Factor loadings for a two factor and the one factor are presented in Table 1. A drop in eigenvalues in the two factor structure from 5.12 to 2.03 further points to a one factor structure.

In a previous three phase study utilizing this instrument, a clear two factor pattern emerged for Caucasian college students. This pattern was expected by the instrument and labeled *Traditionally Male Occupational Self-Efficacy* and *Traditionally Female Occupational Self-Efficacy*. However, for the African American students in the previous study, the results suggested a pattern of one strong factor and one weak factor (Bonett & Stickel, 1992).

For this study, analysis of variance was performed on the total *CAS* scores as the traditionally male and traditionally female factors were not indicated for the African American sample. Analyses revealed a significant main effect for gender ($F= 6.22$; $df = 1, 70$; $p= .015$), plans for college ($F=4.94$, $df= 1, 70$; $p=.02$) and year in school ($F=4.5$, $df=1, 70$; $p=.03$).

A separate analysis of variance on the SEI scores indicated a significant main effect for gender ($F=6.11$, $df=1,70$; $p=.02$). Plans for college and year in school were not significant.

Discussion

A need exists to determine the potential application of self-efficacy theory to the career development of ethnic minority groups. Kutsick and Jackson (1988) stated that the basic problem faced by many minority children may be a lack of self-efficacy and have outlined strategies for intervening to raise percepts of efficacy in general. Spindler and Spindler (1989) noted that minority children may not perceive, understand, or master the instrumental relationships on which school work is predicated and may develop low self-esteem and low estimates of self-efficacy as a result. Neither described how self-efficacy was to be assessed.

The results of this study are preliminary and need to be interpreted with caution especially due to sample limitations. Students from grades 7 through 12 represent a broad developmental span and these differences in perceptions may have influenced the results. Differences across both grade in school and plans for college were indicated. Further study is needed on larger samples that are inclusive of appropriate comparison groups.

However of importance are indications that African American students may acquire career self-efficacy expectations differently than do members of the majority culture. Gender differences are also of interest. In general, studies have indicated that self-efficacy beliefs are predictive of college students academic choices and achievements as well as the differential efficacy building experience of gender (Lopez & Lent, 1992). Instruments utilized in the measurement of the self-efficacy construct may measure perceptions that are quite different for different groups. It is of importance to fully analyze the psychomentric properties of new instruments particularly as they relate to the complexity of the variables to be measured. Future research is needed in the development of adequate instruments for measuring self-efficacy in minority populations. Particular attention to how these expectations are acquired as minority children live and attend schools in an environment shaped primarily by the dominant culture.

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Table 1
CAS and SEI Scores by Year

	N	CAS Total		SEI	
		m	sd	m	sd
Year 7	21	53	12.4	69.7	21.2
Year 8	9	51	11.1	71.5	21.1
Year 10	10	50.8	16.1	72.8	14.5
Year 11	19	57.4	11.4	62.1	14.2
Year 12	12	63.4	7.2	86.3	10.1

Table 2
CAS Factor Loading Matrix

Item	Factor 1	Factor 2	Factor 1
1	.57	.09	.57
2	.78	-.14	.57
3	.46	.32	.64
4	.42	.18	.51
5	-.04	.70	.50
6	.13	.54	.53
7	-.18	.71	.38
8	.50	.18	.58
9	.49	.04	.46
10	-.13	.72	.43
11	.57	.03	.52
12	.07	.62	.54
13	.76	-.03	.63
14	.06	.45	.40
15	.17	.61	.63
16	.74	.13	.54
17	.37	-.08	.26
18	.42	.36	.65
eigenvalue	5.12	2.03	

CAREER ATTITUDE SURVEY

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S.A. Stickel and R.M. Bonett

For each occupation described below, please indicate how confident you are that you could competently handle this career. Answer by circling the appropriate number using the following scale:

1 = not at all confident 2 = somewhat confident 3 = moderately confident 4 = confident 5 = very confident

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Occupational Therapist

Preparation requires a bachelor's degree in occupational therapy. Entry to educational programs is competitive and applicants are screened carefully. Occupational therapists provide services to people who are mentally, physically or emotionally disabled. Occupational therapists help these people learn skills by providing specific activities and adaptive equipment. The job can be physically demanding. Occupational therapists may occasionally have to work evenings, weekends, or holidays.

1 2 3 4 5

Pharmacist

For required licensing, one must obtain a bachelor's degree which involves 5 years of study beyond high school. The curriculum emphasizes math, science, chemistry, biology physics, and social sciences. Pharmacists provide information regarding proper selection and use of medications as well as dispense prescribed drugs and medicines. They usually work in clean, light areas resembling small labs and spend a lot of time on their feet. They may have to work evenings, nights, weekends, and holidays.

1 2 3 4 5

Dental Hygienist

For licensing, one must graduate from an accredited dental hygiene school and pass a written and clinical exam. Most programs grant an associate degree, including courses in the basic sciences, dental science and liberal arts. Hygienists remove deposits from patients' teeth, expose and develop x-ray films and instruct in proper personal dental care. Most hygienists work fewer than 35 hours per week and occasionally work evenings or weekends.

1 2 3 4 5

Surveyor

Preparation includes some post secondary schooling as well as extensive on-the-job training. Some states require a college degree for licensing. Surveyors establish official land and water boundaries, write descriptions of land for deeds, leases, etc. They measure construction and mineral sites and collect information for the preparation of maps and charts. The work is active and sometimes strenuous. Surveyors are exposed to all types of weather, but also spend considerable time indoors on office duties.

1 2 3 4 5

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Administrative Secretary

Training can include a two year program offered by a business school or community college. Administrative secretaries duties range from filing, routing mail and answering phones to complex work such as doing research and preparing statistical reports. Highly specialized work in legal or medical areas is also possible. Administrative Secretary's work can involve long periods of sitting and reading of materials. Administrative secretaries generally work a 40 hour week.

1 2 3 4 5

Librarian

A masters degree is necessary to obtain an entry level professional position. Librarians make information available to people and serve as a link between the public and sources of information. Libraries are demanding even stressful places to work. Contact with people may be taxing. Physically, the job may require much standing stooping bending and reaching. Public and college librarians may work some weekends and evenings.

1 2 3 4 5

Architect

To qualify for the required registration exam, individuals must have a Bachelor of Architecture degree and 3 years of experience in an architect's office. Course work can include design, graphics, engineering, social sciences and humanities. Architects duties require a variety of skills such as design, engineering, managerial and supervisory. Most of their time is spent in offices; however they also often work at construction sites, and may work under stress to meet deadlines.

1 2 3 4 5

Secondary School Physics Teacher

A bachelors degree from an approved teacher training program is needed. Courses include physics, mathematics, other sciences and general education courses. Secondary teachers facilitate the transition from childhood to adulthood. Physics teachers develop lesson plans, prepare, give, and grade examinations and supervise laboratory work. Other duties may include extracurricular activities and attending meetings with parents and school personnel. Teaching can be physically, mentally and emotionally tiring.

1 2 3 4 5

Speech Pathologist

A masters degree is the standard credential and course work includes advanced anatomy and physiology. Speech pathologists assist children and adults by evaluating their speech,language, or hearing abilities and providing treatment. The job is not physically demanding, however close attention to detail and the intense concentration needed can be mentally exhausting.

1 2 3 4 5

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1 = not at all confident 2 = somewhat confident 3 = moderately confident 4 = confident 5 = very confident

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Drafter

Most drafters have 2 years post-high school training, which includes courses in mathematics, physical sciences, mechanical drawing, and drafting. Drafters prepare detailed drawings based on sketches, specifications and calculations made by engineers, architects and designers. They often sit at drawing boards or computer terminals and do detailed work for long periods of time. Drafters typically work a 5 day 40 hour week.

1 2 3 4 5

Optometrist

The Doctor of Optometry degree requires a minimum of 6 years of college. Course work includes English, mathematics, physics, chemistry, biology and zoology. Optometrists examine eyes to diagnose vision problems and detect signs of disease and other abnormal conditions. They may also prescribe vision therapy or other treatment which does not require surgery. Optometrists can have considerable flexibility in setting their hours of work, however, may work over 40 hours a week, including weekends and evenings.

1 2 3 4 5

Air Traffic Controller

Air traffic controllers are selected through the competitive Federal Civil Service System. Computation, abstract reasoning and spatial visualization are among the aptitudes measured by the examination. Applicants generally have work experience and a college degree. Air Traffic Controllers keep track of planes flying within their assigned area and make certain that they are a safe distance apart. They must work rapidly and efficiently with total concentration. Controllers work a basic 40 hour week but may work additional hours. Night and weekend shifts are possible.

1 2 3 4 5

Chemist Ph.D

A Ph.D is required for basic research, for a college faculty position and for most administrative positions. A Ph.D requires a minimum of 4 years of study beyond a bachelors degree. In basic research chemists investigate the properties, composition and structure of matter. College faculty members divide their time among teaching, research, advising and administrative responsibilities. Chemists usually work in offices, and laboratories. They typically work a 5 day 40 hour week.

1 2 3 4 5

Flight Attendant

Airlines like to have poised tactful and resourceful individuals who can deal comfortably with people. College training is preferred. Flight Attendants for international airlines must generally speak an appropriate foreign language fluently. Flight Attendants look after passengers flight safety and comfort by giving instructions and serving food and beverages. They answer questions help care for small children and may administer first aid. Attendants may work at night and on holidays and weekends. Work can be strenuous and trying. Attendants stand during much of the flight and must remain pleasant and efficient.

1 2 3 4 5

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1 = not at all confident 2 = somewhat confident 3 = moderately confident 4 = confident 5 = very confident

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Dietitian

A bachelor's degree with a major in foods and nutrition or institutional management is the basic educational requirement. Dieticians provide nutritional counseling for individual and groups, set up and supervise food service systems for institutions such as hospitals and schools, and promote sound eating habits through education and research. Dieticians may spend considerable time on their feet. Those involved in consulting spend a significant amount of time traveling.

1 2 3 4 5

Home Economist - College Faculty

Doctoral degree holders are considered for entry level academic appointment. Doctoral programs require a minimum of 4 years of study beyond the bachelors degree including intensive research for a doctoral dissertation. Home economists generally teach several different courses in the same field. They keep up with developments in their field by reading curren: literature and participating in professional activities. They also conduct and publish the results of their own scholarly research. Faculty members generally have flexible schedules dividing their time between teaching, research, and advising.

1 2 3 4 5

Registered Nurse

Nursing programs vary in length from 2-5 years after high school graduation. Course work includes anatomy, physiology, microbiology, nutrition and psychology. A bachelor's degree is necessary for supervisory or administrative positions.Typically, they assess and record symptoms, and progress of patients, administer medication, and instruct patients and family members in proper health maintenance care. Nurses need physical stamina, and emotional stability is required to cope with human suffering and frequent emergencies. Nurses may have to work nights, weekends or holidays.

1 2 3 4 5

Electrical Engineer

A bachelor's degree is acceptable for a beginning engineering job. A typical 4 year curriculum includes courses in sciences, mathematics, physics, chemistry, introductory engineering, humanities, social; sciences, and English. Electrical engineers design, develop, and test electrical and electronic equipment. They generally specialize in a major area such as power distributing equipment, integrated circuits, computers, or communications. They typically work a 5 day 40 hour week.

1 2 3 4 5